

# NGUYEN Quang-Duy



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## Education

- 2017 – 2020 **PhD in Computer Science**  
École Doctorale des Sciences Pour l'Ingénieur, University Clermont-Auvergne, France  
UR TSCF, MathNUM département, INRAE (Irstea), Clermont-Ferrand, France  
*PhD defense : 16/07/2020*
- 2014 – 2015 **Master 2 in Networks and Communicating Systems**  
University Claude Bernard Lyon I, France  
*Note : 15.31/20.00 - Rank : 1/60*
- 2013 – 2014 **Master 1 in Computer Science**  
Institute Francophone for Information Technology (IFI), Hanoi, Vietnam  
*Note : 14.20/20.00*
- 2007 – 2012 **Engineer of Information Technology in Computer Engineering**  
Hanoi University of Science and Technology, Vietnam  
*Note : 14.96/20.00*

## Experience

- 12/2021 – present **Postdoctoral Researcher**  
LSEA laboratory, CEA List, Palaiseau, France  
*Project : Tools and methods for system complex engineering in Industrie 4.0*  
*Keywords : Industrie 4.0, LocalSEA testbed, OPC UA, TurtleBot3, Niryo, ROS*
- 10/2020 – 09/2021 **Postdoctoral Researcher**  
LTCL laboratory, Télécom-Paris, Palaiseau, France  
*Project : OPC-UA PubSub for Caméléon*  
*Keywords : IIoT, SNCF, OPC UA, PubSub, Embedded System, Zephyr OS, C*
- 01/2017 – 07/2020 **PhD Student**  
UR TSCF, MathNUM département, INRAE  
*Project : ConnecSens, AgroTechnoPôle*  
*Keywords : Agriculture, IoT, Ontology, Reasoning, OWL, SWRL, Python*
- 08/2016 – 10/2016 **Research Engineer**  
Programmation, Networks and Systems team, LaBRI laboratory, Bordeaux, France  
*Project : Le Palais de la Mémoire*  
*Keywords : Sounds, Method of Loci, Distributed Algorithms, Beacons, BLE, Android*
- 04/2015 – 07/2016 **Master 2 Intern / Research Engineer**  
Networks team, ICube laboratory, Strasbourg, France  
*Project : FIT/IoT-lab*  
*Keywords : Multihoming, Mobility, Contiki, TelosB, Python, C/C++*
- 01/2014 – 07/2014 **Master 1 Intern**  
Institute Francophone for Information Technology  
*Project : Modeling and diffusion of mobile users profile*  
*Keywords : Participative Detection, Modeling, Android, GAMA Platform, GAML*

## Publications\*

[CI.6] **Quang-Duy Nguyen**, Patrick Bellot, and Pierre-Yves Petton, "An OPC UA PubSub Implementation Approach for Memory-Constrained Sensor Devices", Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), 06/2022

[CI.5] **Quang-Duy Nguyen**, Fadwa Tmar, Yining Huang, and Saadia Dhoub, "Early Lessons Learned from the Development of a Local OPC UA-based Robotic Testbed for Research", Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), 06/2022

[CI.4] **Quang-Duy Nguyen**, Saadia Dhoub, Jean-Pierre Chanet, and Patrick Bellot, "Towards a Web-of-Things Approach for OPC UA Field Device Discovery in the Industrial IoT", Proceedings of the 18th IEEE International Conference on Factory Communication Systems (WFCS), 04/2022

[CI.3] **Quang-Duy Nguyen**, Catherine Roussey, Patrick Bellot, and Jean-Pierre Chanet, "Stack of Services for Context-Aware Systems : An Internet-Of-Things System Design Approach", Proceedings of the 15th IEEE International Conference on Computing and Communication Technologies (RIVF), 08/2021

[JI.2] Julian Eduardo Plazas, Sandro Bimonte, Christophe de Vault, Michel Schneider, **Quang-Duy Nguyen**, Jean-Pierre Chanet, Hongling Shi, Kun Mean Hou, and Juan Carlos Corrales, "A Conceptual Data Model and its Automatic Implementation for IoT-Based BI Applications : UML Profile and MDA Approach", IEEE Internet of Things Journal, 10/2020

[T.1] **Quang-Duy Nguyen**, "Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0", PhD thesis, University Clermont-Auvergne, 07/2020

[CF.2] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, Jean-Pierre Chanet, and Camille Noûs, "CASO et IRRIG deux ontologies pour le développement de systèmes contextuels : cas d'usage sur l'automatisation de l'irrigation", Proceedings of le 31es journées francophones d'Ingénierie des Connaissances (IC), 07/2020

[JI.1] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, and Jean-Pierre Chanet, "Development Experience of a Context-Aware System for Smart Irrigation using CASO and IRRIG ontologies", Special Issue "Semantic Technologies Applied to Agriculture", MDPI Applied Science Journal, 2020.

[CI.2] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, "Ontological Requirement Specification for Smart Irrigation Systems : A SOSA/SSN and SAREF Comparison", Proceedings of the 9th International Semantic Sensor Networks Workshop, 17th International Semantic Web Conference (ISWC), 10/2018

[CF.1] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, "Besoins ontologiques d'un système d'irrigation intelligent : Comparaison entre SSN et SAREF", Proceedings of le 29es journées francophones d'Ingénierie des Connaissances (IC), 07/2020

[CI.1] **Quang-Duy Nguyen**, Julien Montavont, Nicolas Montavont, and Thomas Noël, "RPL Border Router Redundancy in the Internet of Things", Proceedings of the 15th International Conference on Ad-Hoc Networks and Wireless (Adhoc-Now), 07/2016.

### Summary

First-authored items : 8/11

Citations : 34

H-index : 4

I-index : 1

Items related to **IoT/IIoT** : 6

Items related to **Ontology** : 5

Items related to **OPC UA** : 3

Items related to **Robotics** : 1

## Research Skills

Project Management ■■■■■■■■■■  
System Implementation ■■■■■■■■■■  
Scientific Writing ■■■■■■■■■■  
Presentation ■■■■■■■■■■

## Linguistic

French ■■■■■■■■■■  
English ■■■■■■■■■■  
Vietnamese ■■■■■■■■■■

## Technical Skills

Development Process	Mini-Waterfall, LOT, Agile
Operating System	Linux, Zephyr, Contiki, Android
Network Protocol	TCP/IP, OPC UA PubSub, MQTT
Vocabulary	SOSA/SSN, CASO, IRRIG, AAS
Tool	Protégé, GIT, Latex, Wireshark

## Programming

C/C++	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Java	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Python	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Shell script	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Query language	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

## References

- **Dr. Saadia DHOUIB**, Senior researcher in LSEA laboratory, DILS department,CEA List  
*Supervisor of the project "Tools and methods for system complex engineering in Industrie 4.0"*  
✉ saadia.dhouib@cea.fr
- **Prof. Patrick BELLOT**, Director of CCN team, LCTI laboratory, INFRES department, Télécom-Paris  
*Project manager of the project "OPC-UA PubSub for Caméléon"*  
✉ patrick.bellot@telecom-paris.fr
- **Dr. Jean-Pierre CHANET**, Director of UR TSCF, MathNUM department, INRAE  
*Director of the thesis "Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0"*  
✉ jean-pierre.chanet@inrae.fr